

ICS 91.220
CCS P 97



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 13750-2004

Replacing GB/T 13750-2004

**Vibratory pile driving and extracting equipment - Safety
operation rules**

振动沉拔桩机 安全操作规程

(English Translation)

Issued on: September 7, 2023

Implemented on: April 1, 2024

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting.

This document replaces GB/T 13750-2004 "Safe Operating Procedures for Vibratory Pile Sinking and Extraction Machines". Compared with GB/T 13750-2004, except in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The scope of application of this document has been changed (see Chapter 1, Chapter 1 of the 2004 edition);
- b) Added a "Terms and Definitions" chapter (see Chapter 3);
- c) General safety requirements are added (see 4.1.2, 4.1.3, 4.1.5, 4.1.9~4.1.12);
- d) The loading, unloading and maintenance requirements for pile drivers and components have been changed (see 4.1.7, 3.2 and 3.4 of the 2004 edition);
- e) Changed the requirements for the safe distance of the vibrating hammer from the top of the pile frame (see 4.1.8, 6.6 of the 2004 edition);
- f) The regulations for inspection and maintenance of wire ropes have been changed (see 4.1.13, 5.1 of the 2004 edition);
- g) Added specifications for the transportation, loading, unloading and maintenance of pile frames, cranes and winches (see 4.2.1~4.2.3);
- h) Added safety factor requirements for pile driver wire ropes (see 4.2.4);
- i) Added requirements for hand flag signals for water construction (see 4.2.5);
- j) Added general operating requirements for the pile driver combined with a vibrating hammer and excavator (see 4.3);
- k) The requirements for track-type pile drivers are deleted (see 4.3 and 7.2 of the 2004 edition);
- l) Changed the requirements for the distance between pile drivers and overhead transmission lines (see 5.1.2, 4.4 of the 2004 edition);
- m) Added requirements for fire extinguishing equipment at the work site (see 5.1.4);
- n) Added lighting requirements for night operations (see 5.1.5);
- o) The requirements for grounding specific pressure and working site slope have been changed (see 5.2.1, 4.1 and 4.2 of the 2004 edition);
- p) The requirements for the external power supply and wiring of the pile driver have been changed (see 5.2.2, 5.2.3, 4.5 of the 2004 edition);

- q) Added requirements for crane selection (see 5.2.4);
- r) Added layout requirements for diesel engine ventilation and exhaust systems (see 5.2.5);
- s) Added operating condition requirements for water construction (see 5.2.6);
- t) Added operating condition requirements for pile drivers combining vibrating hammers and excavators (see 5.3);
- u) The inspection requirements for bolts in various parts of the pile driver before operation have been changed (see 6.1.1, 5.9 and 5.11 of the 2004 edition);
- v) Added inspection requirements for the hydraulic system before operation (see 6.1.2~6.1.5);
- w) Changed the inspection requirements for tooth surface wear of hydraulic clamps before operation (see 6.1.8, 5.15 of the 2004 edition);
- x) The requirements for checking the insulation resistance of the electrical system before operation have been changed (see 6.2.2, 5.6 and 5.7 of the 2004 edition);
- y) Added inspection requirements for the diesel engine air inlet and outlet system before operation (see 6.2.5);
- z) Added inspection requirements for pile drivers combined with vibrating hammers and excavators before operation (see 6.3);
- aa) The operation mode of left and right diagonal braces has been deleted (see 6.3 of the 2004 edition);
- bb) Delete the description of the relationship between pile sinking speed and excessive current (see 6.10 of the 2004 edition);
- cc) Added safety operation requirements for driver operating locations and personnel (see 7.1.1~7.1.3);
- dd) Changed the safety requirements for pile driver maintenance during operation (see 7.1.7, 6.15 of the 2004 edition);
- ee) Added operating requirements for starting and stopping the resonance-free vibrating hammer (see 7.1.8);
- ff) Added operational requirements for automatic pressure compensation during hydraulic fixture operation (see 7.1.10);
- gg) Added operational requirements for pile pulling operations (see 7.1.11, 7.1.12);
- hh) Added inspection of diesel engine pre-ignition (see 7.1.13);
- i) The operating requirements for pile driver rotation have been changed (see 7.2.2, 6.4 of the 2004 edition);

- j) The restriction requirements for the synchronous action of the pile driver have been changed (see 7.2.3, 6.1 of the 2004 edition);
- kk) Added requirements for safe operation when the pile driver is traveling (see 7.2.4);
- l) The operational requirements for static pile pulling have been changed (see 7.2.6, 6.8 of the 2004 edition);
- mm) Added requirements for driving inclined piles (see 7.2.7 and 7.2.8);
- nn) Added operational requirements for water construction operations (see 7.2.10~7.2.12);
- oo) Added operational requirements for pile driving operations using a combination of vibrating hammer and excavator (see 7.3);
- pp) The requirements for stopping and placing the pile driver after operation have been changed (see 8.1, 7.1 of the 2004 edition);
- qq) Added requirements for transportation and storage of the power station after operation (see 8.2);
- rr) Added maintenance requirements for the pile driver combined with vibrating hammer and excavator after operation (see 8.5);
- ss) Added requirements for equipment placement after water construction operations (see 8.6);
- tt) The requirements for the use of rope clamps have been changed (see Appendix A, 3.6 of the 2004 edition).

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

1 Scope

This document specifies the safe operation requirements for vibratory pile sinking and pulling machines and operators before, during and after operation.

This document applies to vibratory sinking and pulling out equipment consisting of a vibrating pile hammer (hereinafter referred to as "vibrating hammer") and a pile frame, crane (including crane ship), excavator, etc.

The safe use and operation of pile drivers (hereinafter referred to as "pile drivers").

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this